

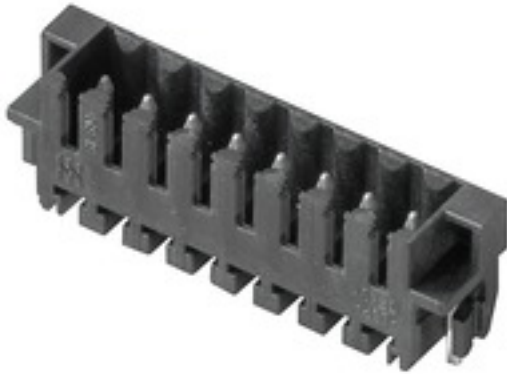
SL-SMT 3.50/12/180RF 1.5SN BK RL CO**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

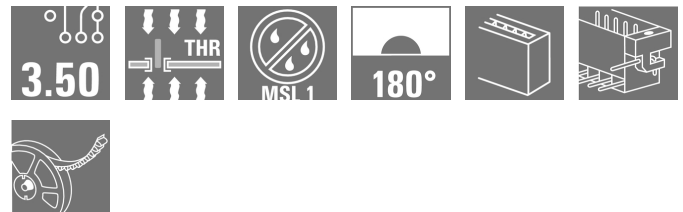
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Product image

Similar to illustration

High-temperature-resistant male header, 3.50 mm pitch.

- **Plugging direction parallel (90°), straight 180° or angled (135°) to PCB**
- **Housing variants: closed side (G), screw flange (F), solder flange (LF) or snap-on solder flange (RF)**
- **Optimised for the SMT process**
- **Pin length 3.2 mm universal for all soldering methods**
- **Pin length 1.5 mm optimised for reflow soldering methods**
- **Packed either in a box (BX) or tape-on-reel (RL)**
- **Male header can be coded**

**General ordering data**

Version	PCB plug-in connector, male header, Clip-on flange, THT/THR solder connection, 3.50 mm, Number of poles: 12, 180°, Solder pin length (l): 1.5 mm, tinned, black, Tape
Order No.	2591920000
Type	SL-SMT 3.50/12/180RF 1.5SN BK RL CO
GTIN (EAN)	4050118600049
Qty.	230 pc(s).
Product data	IEC: 320 V / 15 A UL: 300 V / 10 A
Packaging	Tape

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Technical data

Dimensions and weights

Depth	7.4 mm	Depth (inches)	0.291 inch
Height	12.6 mm	Height (inches)	0.496 inch
Height of lowest version	11.1 mm	Net weight	3.928 g
Width	48.86 mm	Width (inches)	1.924 inch

System specifications

Product family	OMNIMATE Signal - series BL/SL 3.50	Type of connection	Board connection
Mounting onto the PCB	THT/THR solder connection	Pitch in mm (P)	3.5 mm
Pitch in inches (P)	0.138 inch	Outgoing elbow	180°
Number of poles	12	Number of solder pins per pole	1
Solder pin length (l)	1.5 mm	Solder pin length tolerance	0 / -0.3 mm
Solder pin dimensions	d = 1.2 mm, Octagonal	Solder pin dimensions = d tolerance	0 / -0.03 mm
Solder eyelet hole diameter (D)	1.4 mm	Solder eyelet hole diameter tolerance (D)	+ 0.1 mm
Outside diameter of solder pad	2.3 mm	Template aperture diameter	2.1 mm
L1 in mm	38.5 mm	L1 in inches	1.516 inch
Number of rows	1	Pin series quantity	1
Touch-safe protection acc. to DIN VDE 57 106	Safe from back-of-hand touch	Touch-safe protection acc. to DIN VDE 0470	IP 10
Volume resistance	≤5 mΩ	Can be coded	Yes
Plugging cycles	25	Plugging force/pole, max.	6 N
Pulling force/pole, max.	6 N		

Material data

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 175	Insulation strength	≥ 10 ⁸ Ω
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
Contact material	CuSn	Contact surface	tinned
Layer structure of solder connection	2...3 µm Ni	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-50 °C
Operating temperature, max.	100 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	100 °C		

Rated data acc. to IEC

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	15 A
Rated current, max. number of poles (Tu=20°C)	12 A	Rated current, min. number of poles (Tu=40°C)	13 A
Rated current, max. number of poles (Tu=40°C)	10 A	Rated voltage for surge voltage class / pollution degree II/2	320 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	160 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	2.5 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	2.5 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	2.5 kV		

Rated data acc. to CSA

Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group D / CSA)	300 V
Rated current (Use group B / CSA)	10 A	Rated current (Use group D / CSA)	10 A

Creation date April 16, 2021 4:02:32 AM CEST

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Technical data

Rated data acc. to UL 1059

Rated voltage (Use group B / UL 1059) 300 V

Rated voltage (Use group D / UL 1059) 300 V

Rated current (Use group B / UL 1059) 10 A

Rated current (Use group D / UL 1059) 10 A

Packing

Packaging	Tape	VPE length	332 m
VPE width	332 m	VPE height	95 m
Tape depth (T2)	16.5 mm	Tape width (W)	88 mm
Tape pocket depth (K0)	16 mm	Tape pocket height (A0)	7.8 mm
Tape pocket width (B0)	71.8 mm	Tape pocket separation (P1)	16 mm
Tape hole separation (E)	1.75 mm	Tape pocket separation (F)	42.2 mm
Tape reel diameter $\varnothing$ (A)	330 mm	Surface resistance	$R_s = 10^9 - 10^{12} \Omega$
Width Pick & Place Pad (W_{PPP})	6.8 mm	Length Pick & Place Pad (L_{PPP})	12.65 mm
Diameter of the withdrawal surface ($\varnothing D_{max}$)	5 mm	Protrusion 1 Pick & Place Pad ($L_{01 (PPP)}$)	2.7 mm
Protrusion 2 Pick & Place Pad ($P_{02 (PPP)}$)	2.5 mm		

Important note

IPC conformity	Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.
Notes	• Gold-plated contact surfaces on request • Rated current related to rated cross-section & min. No. of poles. • Diameter of solder eyelet $D = 1.4 + 0.1 \text{ mm}$ • Solder eyelet diameter $D = 1.5 + 0.1 \text{ mm}$, from 9 poles • P on drawing = pitch • Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards. • Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months

Downloads

Brochure/Catalogue [Catalogues in PDF-format](#)

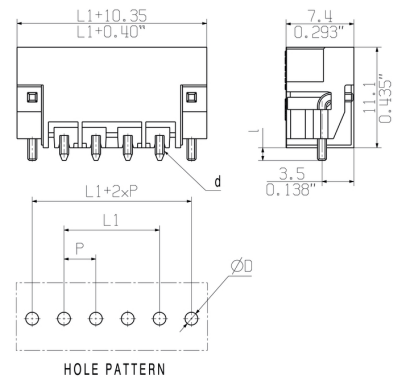
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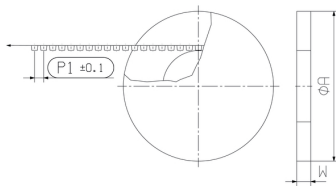
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Drawings

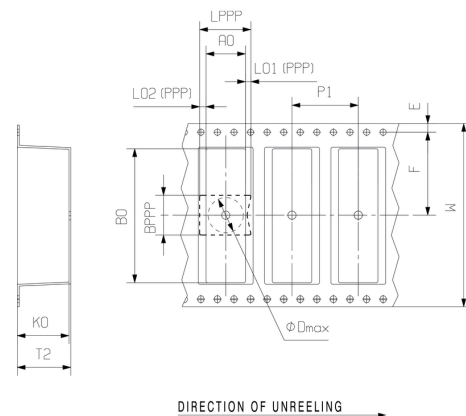
Dimensional drawing



Dimensional drawing



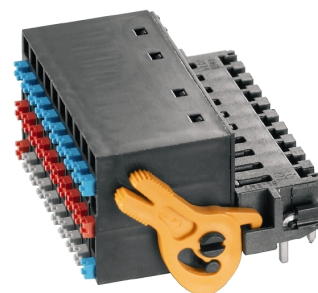
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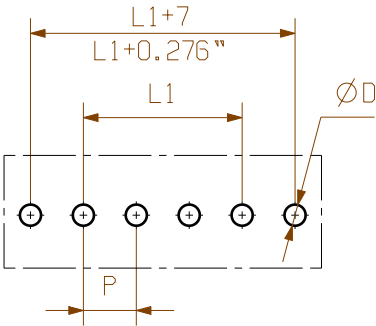
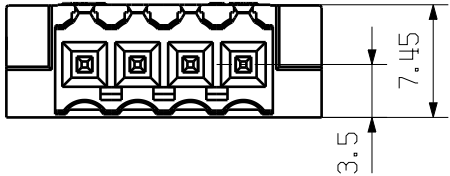
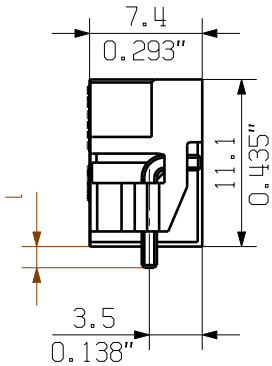
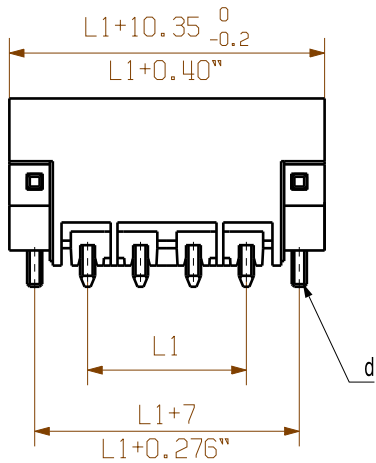


Example of use

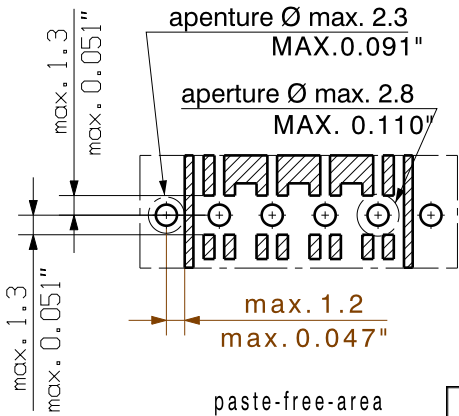


Example of use





hole pattern

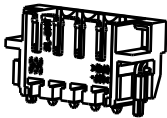


paste-free-area

pin length l	tolerance
1,5	0,0
	-0,3
2,6	0,0
	-0,3
3,2	0,0
	-0,3
4,5	0,0
	-0,3

24	80,50	3,169	+/- 0.2
23	77,00	3,031	
22	73,50	2,894	
21	70,00	2,756	
20	66,50	2,618	
19	63,00	2,480	+/- 0.15
18	59,50	2,343	
17	56,00	2,205	
16	52,50	2,067	
15	49,00	1,929	
14	45,50	1,791	+/- 0.1
13	42,00	1,654	
12	38,50	1,516	
11	35,00	1,378	
10	31,50	1,240	
9	28,00	1,102	+/- 0.1
8	24,50	0,965	
7	21,00	0,827	
6	17,50	0,689	
5	14,00	0,551	
4	10,50	0,413	+/- 0.1
3	7,00	0,276	
2	3,50	0,138	
n	L1 [mm]	L1 [Inch]	tolerance

1:1



shown: SL-SMT 3.50/04/180RF

For the mounting of PCBs, it should be noted that the rated data given in the catalogue relates only to the connection elements. The necessary creepage and clearance paths must be observed in connection with the respective applicant in accordance to VDE 0110. The current-carrying capacity and pitch tolerance is to be determined according to DIN IEC 326 part 3 very fine.

Weidmüller connectors are tested to the DIN VDE 0627 standard, and are valid for its field of application. Provided that the connectors are used to the intended purpose, all requirements with respect to the occurring of electrical, mechanical, thermic and corrosive stress will be satisfied.

GENERAL TOLERANCE:
DIN ISO 2768-mK

Scale: 2:1

Supersedes: .

99546/5
08.12.17 HELIS_MA
00

Modification

Date

28.11.2007

Name

HELIS_MA

Drawn

Responsible

Checked

Approved

AMANN_A

HERTEL_S

LANG_T

Weidmüller

SL-SMT 3.50/.../180...

STIFTLEISTE
MALE HEADER

Product file: SL-SMT 3.50

Cat.no.: .

3 34146

11

Drawing no.

Issue no.

Sheet 05

of 05

sheets

Recommended wave soldering profiles

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Single Wave:



Double Wave:



Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

We reserve the right to make technical changes.

Recommended reflow soldering profile

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Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically $\leq +3\text{K/s}$. In parallel the solder paste is 'activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at $\geq -6\text{K/s}$ solder is cured. Board and components cool down while avoiding cold cracks.